

Atty. Docket No. 42390P5444

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Steven R. Eskildsen et al.

Application No. 09/103,110

Filed: June 23, 1998

For: IC PACKAGE WITH EDGE CONNECT
CONTACTS

Commissioner of Patents
Washington, DC 20231-9998
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Examiner: Dinh, Tuan T.

Art Unit: 2827

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AMENDMENT

Sir:

In response to the Office Action dated August 7, 2002, applicants respectfully request that
the Examiner consider the following amendment.

IN THE CLAIMS

Please cancel without prejudice claims 15-24 and add new claims 25-36 as indicated
below.

The following is a clean version of the claims as amended. All of the claims pending in
this application are set forth for the convenience of the Examiner. A version with markings to
show changes made is set forth as an appendix to this Amendment.

15. – 24. (Cancelled)

25. (New) An apparatus for use in a data processing device, comprising:
an integrated circuit (IC) package having a plurality of leads extended from the IC package;
a first receptacle for receiving the IC package, the first receptacle including a first opening to receive the plurality of leads when the IC package is inserted into the first receptacle through a second opening disposed away from the first opening;
and
a second receptacle disposed on the data processing device for receiving the first receptacle, the second receptacle having a plurality of contacts,
wherein the plurality of leads of the IC package directly contact, via the first opening, with the plurality of contacts of the second receptacle respectively when the first receptacle is inserted into the second receptacle.

26. (New) The apparatus of claim 25, wherein the first opening is a front opening.

27. (New) The apparatus of claim 25, wherein the second opening is a back opening such that the IC package is inserted into the first receptacle from a back of the first receptacle.

28. (New) The apparatus of claim 25, wherein the second opening is a bottom opening such that the IC package is inserted into the first receptacle from a bottom of the first receptacle using a rotating movement.

29. (New) The apparatus of claim 25, wherein the first receptacle provides a physical and electrostatic discharge protection for the IC package.

30. (New) The apparatus of claim 25, wherein the first receptacle further comprises at least one stop disposed at the second opening to securely hold the IC package within the first receptacle.

31. (New) A method for use in a data processing device, comprising:
providing an integrated circuit (IC) package having a plurality of leads extended from the IC package;
providing a first receptacle for receiving the IC package, the first receptacle including a first opening and a second opening disposed away from the first opening;
inserting the IC package into the first receptacle through the second opening, such that the first opening receives the plurality of leads of the IC package; and
inserting the first receptacle with the inserted IC package into a second receptacle disposed on the data processing device, the second receptacle having a plurality of contacts,
wherein the plurality of leads of the IC package directly contact, via the first opening, with the plurality of contacts of the second receptacle respectively when the first receptacle is inserted into the second receptacle.

32. (New) The method of claim 31, wherein the first opening is a front opening.

33. (New) The method of claim 31, wherein the second opening is a back opening such that the IC package is inserted into the first receptacle from a back of the first receptacle.

34. (New) The method of claim 31, wherein the second opening is a bottom opening such that the IC package is inserted into the first receptacle from a bottom of the first receptacle using a rotating movement.

35. (New) The method of claim 31, wherein the first receptacle provides a physical and electrostatic discharge protection for the IC package.

36. (New) The method of claim 31, wherein the first receptacle further comprises at least one stop disposed at the second opening to securely hold the IC package within the first receptacle.

REMARKS

In the Office Action dated June 23, 2002, claims 15-24 were pending. Claims 15-24 were rejected under the judicial created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 6,250,934. Claims 15-24 were rejected under 35 U.S.C. 103(a) as being unpatentable over Krehbiel (U.S. Patent No. 5,026,297) in view of Ringer et al. (U.S. Patent No. 5,408,386).

A response to the Office Action with two-month expedite procedure under 37 C.F.R. §1.116 had been filed and an Advisory Action was issued on October 21, 2002. In the Advisory Action, the Examiner had considered the response but still maintained the final rejection mailed on August 7, 2002.

In this response, claims 15-24 have been cancelled and new claims 25-36 have been added. Thus claims 25-36 remain pending. No new matter has been added. Reconsideration of the present application is respectfully requested.

Double Patenting

Claims 15-24 were rejected under the judicial created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 6,250,934. In view of the new claims, the rejection is moot. In addition, as this is a provisional rejection, Applicant will wait until the Examiner indicates the conflicting claims are allowable over the art of record before addressing the rejection.

Rejections Under 35 U.S.C. §103(a)

Claims 15-24 were rejected under 35 U.S.C. 103(a) as being unpatentable over Krehbiel in view of Ringer. In view of the new claims, Applicant submits that the rejection is moot and the new claims are patentable over Krehbiel in view of Ringer.

Specifically, independent claim 25 recites as follows:

25. (New) An apparatus for use in a data processing device, comprising:
an integrated circuit (IC) package having a plurality of leads extended from the IC package;
a first receptacle for receiving the IC package, the first receptacle including a first opening to receive the plurality of leads when the IC package is inserted into the first receptacle through a second opening disposed away from the first opening; and
a second receptacle disposed on the data processing device for receiving the first receptacle, the second receptacle having a plurality of contacts, wherein the plurality leads of the IC package directly contact, via the first opening, with the plurality of contacts of the second receptacle respectively when the first receptacle is inserted into the second receptacle.

(emphasis added)

Applicant submits that independent claim 25 includes a limitation of “the first receptacle including a first opening to receive the plurality of leads when the IC package is inserted into the first receptacle through a second opening disposed away from the first opening”, which is not taught or suggested by either Krehbiel or Ringer, individually or in combination.

In the Office Action dated August 7, 2002, the Examiner stated:

an IC package (12, column 5, line 8) having multiple leads (32, 22, column 5, lines 25-26) extending from IC package (12);

a first receptacle (14) receiving the IC package (see figures 1, 7), the first receptacle (14) comprising a first opening which is a front opening (64, column 6, line 32) such that the first opening (64) receiving the multiple leads (32) and provides an opening (66, column 6, line 34), a second opening which is a back or bottom opening (86, column 7, lines 4-5) such that the IC package (12) is inserted into the first receptacle (14) through the second opening (column 7, lines 5-6), and at least one stop (88; 90, column 7,

line 9) positioned at the second opening (86) such that the stop holds the IC package (12) securely within the first receptacle when the IC package is fully inserted into the first receptacle (14) (see figures 1 and 7).

(8/7/2002 Office Action pp. 3-4).

Applicant respectfully disagrees. Krehbiel discloses a SIP (single-in-line package) package 18 inserted into a cover 12 (e.g., a first receptacle) which in turn is inserted into housing 14 (e.g., a second receptacle). However, the SIP 18 is not an IC package. Rather, SIP 18 includes a generally planar substrate having an array of electrical components disposed thereon. The components on the substrate may include “intelligent” electrical components, such as integrated circuit (IC) chips. The circuit extends to discrete conductive regions that are equally spaced along one edge of the planar substrate (see, col. 1, lines 6 to 15). Specifically, substrate 20 of the SIP 18 is provided with a plurality of electrical components 30 (e.g., IC packages) disposed on one surface thereof. The components 30 are electrically connected to discrete conductive regions 32 spaced along the mating edge 22 of the substrate 20 (see, col. 5, lines 22 to 27). Therefore SIP 18 cannot be considered as an IC package inserted into a receptacle.

In addition, even if, for the sake of arguments, the SIP 18 may be considered as an IC package, Krehbiel fails to disclose or suggest the limitation of “the first receptacle including a first opening to receive the plurality of leads when the IC package is inserted into the first receptacle through a second opening disposed away from the first opening.” The SIP 18 is inserted into the cover 12 and the contact regions 32 of the SIP 18 are received through the same opening.

Furthermore, Krehbiel fails to disclose a limitation of “wherein the plurality leads of the IC package directly contact, via the first opening, with the plurality of contacts of the second receptacle respectively when the first receptacle is inserted into the second receptacle.” As

discussed above, the SIP 18 is not an IC package. The IC packages (e.g., components 30) of Krehbiel have to be disposed on a substrate (e.g., a printed circuit board) having a contact region disposed on an edge to contact another socket (e.g., second receptacle). Therefore, the leads of the IC packages are not directly in contact with the second receptacle. In fact, this requirement teaches away from the present invention as claimed. In contrast, new claim 25 discloses an IC package inserted into a first receptacle, such that when the first receptacle is inserted into a second receptacle, the leads of the IC package directly contact with the contact region of the second receptacle. As a result, the PCB or connectors therebetween are not needed.

Ringer discloses a receptacle housing to receive a peripheral device (e.g., a PCMCIA card), instead of an IC package. It is not clear how peripheral device 13 is packaged. Applicants submit that Ringer fails to disclose the limitation of “the first receptacle including a first opening to receive the plurality of leads when the IC package is inserted into the first receptacle through a second opening disposed away from the first opening.”

In addition, peripheral device 13 is not an IC package. Ringer fails to disclose the limitation of “wherein the plurality leads of the IC package directly contact, via the first opening, with the plurality of contacts of the second receptacle respectively when the first receptacle is inserted into the second receptacle.” In contrast, the components (e.g., IC packages) of the peripheral device 13 have to connect to the other socket through a connector, such as, for example, a PCMCIA connector. As a result, the leads of the components or IC packages are not directly in contact with a contact region of the other receptacle or socket.

It is respectfully submitted that Krehbiel does not teach or suggests a combination with Ringer and that Ringer does not teach or suggest a combination with Krehbiel. Even if Krehbiel and Ringer were combined, such a combination would lack the limitations of “the first receptacle including a first opening to receive the plurality of leads when the IC package is inserted into the

first receptacle through a second opening disposed away from the first opening” and “wherein the plurality leads of the IC package directly contact, via the first opening, with the plurality of contacts of the second receptacle respectively when the first receptacle is inserted into the second receptacle” of new claim 25.

Therefore, independent claim 25 is patentable over Krehbiel in view of Ringer.

Similarly, independent claim 31 is a method claim corresponding to apparatus claim 25 and includes similar limitations of claim 25. Therefore, for the reasons similar to those discussed above, Applicant submits that independent claim 31 is patentable over Krehbiel in view of Ringer.

The rest of the claims depend from one of the above independent claims, and thus include all of the distinct features of their respective independent claim. Therefore, for the reasons similar to those discussed above, these dependent claims are patentable over Krehbiel in view of Ringer.

In view of foregoing arguments, Applicant respectfully submits that the rejections have been overcome and withdrawal of the rejections is respectfully requested.

CONCLUSION

In view of the foregoing, Applicant respectfully submits the present application is now in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call the undersigned attorney at (408) 720-8300.


Applicant hereby petitions for an extension of time to respond to the pending Office Action, and a check for the extension fee is enclosed.

Please charge Deposit Account No. 02-2666 for any shortage of fees in connection with this response.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

Date: 12/4, 2002



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